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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/159,397	09/23/1998	SAU C. WONG	M-6073US	5079

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EXAMINER

WHIPKEY, JASON T

ART UNIT PAPER NUMBER

2612

DATE MAILED: 09/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/159,397

Applicant(s)

WONG ET AL.

Examiner

Jason T. Whipkey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 1998 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference signs not mentioned in the description: 230 (Figures 2, 8, 9, and 10), 240 (Figures 2, 8, 9, and 10), 280 (Figure 2), 528 (Figure 5), 625 (Figure 6), 630 (Figure 6), 640 (Figure 6), 645 (Figure 6), 650 (Figure 6), 705 (Figure 7), 710 (Figure 7), 725 (Figure 7), 735 (Figure 7), 760 (Figure 7), 765 (Figure 7), and 770 (Figure 7). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference signs in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is

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requested in correcting any errors of which applicant may become aware in the specification.

4. The disclosure is objected to because of the following informality:
  - The application number for the co-pending application referred to on page 11, line 19 is missing.

Appropriate correction is required.

#### ***Claim Objections***

5. Claim 13 is objected to as failing to comply with 37 CFR 1.75(a) for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim recites the limitation "the write circuits" in lines 15 and 18. There is insufficient antecedent basis for this limitation in the claim. The claim lists the components of *each* write pipeline, which includes "a write circuit" (line 7).

6. Claim 17 is objected to because of the following informality: Line 3 refers to "the time circuit," when "the timing circuit" is assumed to be correct. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 15-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 15 recites the limitation "the selection circuit in the even numbered pipeline" in lines 10-11. There is insufficient antecedent basis for this limitation in the claim. For examination purposes, the examiner will treat the claim as if it reads "a selection circuit in the even numbered pipeline."

10. Claim 15 recites the limitation "the second voltage" in line 11. There is insufficient antecedent basis for this limitation in the claim. For examination purposes, the examiner will treat the claim as if it reads "a second voltage."

11. Claim 16 recites the limitation "the threshold voltage" in lines 13-14. There is insufficient antecedent basis for this limitation in the claim. For examination purposes, the examiner will treat the claim as if it reads "a threshold voltage."

Claim 17 is rejected as being dependent on claim 16.

***Claim Rejections - 35 USC § 102***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 3-7, 10, 12, 18, 19, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Roberts.

Regarding claims 1 and 18, Roberts discloses a still video camera with a CCD 1 shown in Figure 2. The system includes sample-and-hold circuitry 18 for receiving and storing analog data from CCD 1 via pixel multiplexer 7 (Figure 5A) (column 7, lines 7-10). Image data is processed and transmitted to processing and compression circuits 10-12, as shown in Figure 5A.

Regarding claim 3, the analog data received by the sample-and-hold circuitry 18 is image data (column 4, lines 38-43).

Regarding claim 4, the processing performed on the image data retrieved from sample-and-hold circuitry 18 includes an analog-to-digital conversion by A/D converters 8.

Regarding claim 5, Roberts shows a compression processor 12 in Figures 2 and 5A.

As for claims 6 and 22, A/D converters 8 process the image data received from sample-and-hold circuitry 18 only after a conversion completion signal CC has been sent to the A/D converters by the sample-and-hold circuitry 18 (column 7, lines 36-41).

Regarding claim 7, Roberts discloses that the invention is an electronic still video camera (column 1, lines 14-15).

Regarding claim 10, Roberts discloses in column 3, lines 1-3 that Figure 2 is the structure of an electronic still camera. Figure 2 includes image processing and compression circuits 10-12.

Regarding claim 12, Roberts discloses in column 3, lines 1-3 that Figure 2 is the structure of an electronic still camera. Figure 2 includes image processing and compression circuits 10-12, CCD 1, and pixel multiplexer 7. Note that the sample-and-hold circuitry 18 omitted from Figure 2 is shown in Figure 5A.

As for claim 19, as shown in Figure 5A, red, green, and blue signals are amplified before being stored in sample-and-hold circuitry 18 (column 7, lines 7-9).

### ***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 2, 13-17, 20, and 23 are rejected under 35 U.S.C. 103(a) as being obvious over Roberts in view of Wong (U.S. Patent No. 6,134,145).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Claims 2 and 20 may be treated like claim 1. However, Roberts is silent with regard to the data specifications of the analog memory.

Wong discloses an analog memory 100. 6.4 MHz is given as an example sampling rate (column 11, lines 57-59). Wong incorporates by reference U.S. Patent



No. 5,687,115, which is also by Wong. Wong '115 discloses that an analog memory cell may, for example, store the equivalent of 12 bits of digital information.

Incoming data sampled at a rate of 6.4 MHz that produces 12 bits per sample results in a data rate of 76.8 megabits per second being input into memory.

Additionally, Wong '145 teaches that memory 100 may have "any number N of pipelines" 110 (column 4, lines 8-11). Using enough pipelines, each containing an additional memory array 130, would permit any amount of data to be stored for any length of time. The advantage to using a large, high-speed memory is that it allows the user to capture an image at a higher resolution. For this reason, it would have been obvious to have Roberts' camera include a high-speed, high-capacity memory.

Regarding claim 13, Wong '145 claims a memory in column 13, lines 50-53 and 64-67 and column 14, lines 1-2, 14-15, and 20-23 that includes the text of all the limitations of claim 13. As stated in column 3, lines 49-50, pipelined memory provides a high data rate. For this reason, it would have been obvious to have Roberts' system include a pipelined memory.

Regarding claim 14, Wong '145 teaches that each memory array 130 may be an analog memory (column 4, lines 20-23).

Regarding claim 15, Wong '145 claims a composition of pipelines in column 13, lines 24-36 that includes the text of all the limitations of claim 15.

Regarding claim 16, Wong '145 claims a memory in column 14, lines 40-49, 55-57, and 59-63 that includes the text of all the limitations of claim 16. As stated in

column 3, lines 49-50, pipelined memory provides a high data rate. For this reason, it would have been obvious to have Roberts' system include a pipelined memory.

Regarding claim 17, Wong '145 claims a composition of banks in column 14, lines 64-67 that includes the text of all the limitations of claim 17.

As for claim 23, Wong '145 claims a method of writing to a memory in column 15, line 28 through column 16, line 4 that includes the text of all the limitations of claim 23. As stated in column 3, lines 49-50, pipelined memory provides a high data rate. For this reason, it would have been obvious to have Roberts' system include a pipelined memory.

16. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts in view of Fernandez.

Claim 8 may be treated like claim 7. However, Roberts is silent with regard to having the analog memory contained in a removable memory card.

Fernandez shows in Figure 2 an EEPROM 50. The EEPROM may be included as part of a removable card, such as a bankcard for an automated teller machine (column 5, lines 14-17). The EEPROM may be written to with write commands (column 5, lines 39-40). The EEPROM memorizes a level of signal charge in its memory cells (column 4, lines 54-59), making it an analog memory. The memory may be read via lines 60 and 62.

The advantage to using a removable analog memory is that many analog memories may be used with one recording device, which increases the amount of data

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that can be stored using one recording device. For this reason, it would have been obvious to have Roberts' camera include a removable analog memory card.

Regarding claim 9, Fernandez teaches that an analog-to-digital converter 46 may be included on a card with EEPROM 50 (column 5, lines 17-19). The advantage of including an A/D converter on a removable card is that it allows a system that processes digital data to use analog data stored on the card. For this reason, it would have been obvious to have Roberts' camera include an A/D converter on a removable memory card.

17. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts in view of Anderson.

This claim may be treated like claim 7. However, Roberts is silent with regard to placing the image processing and compression circuits outside the camera.

Anderson discloses an imaging device 14 and a computer 18 connected by a bus 16. Computer 18 may be separate imaging device 14 (column 3, lines 49-51). The computer performs image processing and compression on the raw image data received from the camera (column 12, lines 9-11, 15-16, 26-29, and 48-50). The advantage to having an external device perform image processing and compression is that the external device may have more space for processing circuitry, which decreases the power used by and the size of the digital camera. For this reason, it would have been obvious to have Roberts' imaging system perform image processing and compression outside the camera.

18. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts in view of Lin.

This claim may be treated like claim 18. However, Roberts is silent with regard to transmitting data from the memory when the digital signal processing is available.

Lin teaches an imaging device with a CCD 12 that stores image data in an analog memory array 34, shown in Figure 2. Image data to be processed is converted to a digital signal by A/D converter 14 and sent to host computer 26 (column 3, lines 55-59) only after the computer makes a request (column 3, lines 63-65). This process is detailed in the flowchart of Figure 5.

The advantage of having data transmitted to a processor only upon request is that the processor may operate at varying speeds without losing data or needing a buffer. For this reason, it would have been obvious to have Roberts' imaging system transmit data from memory to a digital processing system upon the processing system's request.

### ***Conclusion***

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason T. Whipkey, whose telephone number is (703) 305-1819. The examiner can normally be reached Monday through Friday from 8 A.M. to 5:30 P.M. eastern daylight time, alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R. Garber, can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned are (703) 872-9314 for both regular communication and After Final communication.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (703) 306-0377.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
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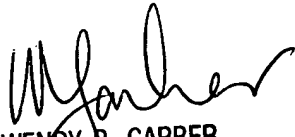
or faxed to (703) 872-9314 for either formal or informal communications intended for entry. (For informal or draft communications, please label "**PROPOSED**" or "**DRAFT**".)

Hand-delivered responses should be brought to the sixth floor receptionist of Crystal Park II, 2121 Crystal Drive in Arlington, Virginia.

JTW

JTW

August 29, 2002

  
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